

REMARKS

This paper is in response to the Office Action of June 2, 2008, the term to respond extends to November 3, 2008, with two month extension. Independent claims 7, 25 and 31 have been amended, and claims 10, and 35-39 were canceled. Claims 7-9, 11-13, and 25-34 are pending.

The newly amended independent claims 7, 25, and 31 direct the claimed invention to embodiments described in the as-filed application. The newly amended independent claims direct the claimed invention to embodiments defining a method of reducing signal noise that actively adapts to movement in the relative position between the user and the sensor array. The newly amended independent claims highlight the execution of a beam-forming operation performed by the first filter (see page 18, lines 20-21 of the as-filed Specification), the second filter performs a reverse beam-forming operation (see page 18, lines 23-24), and the output of the second filter is aligned using an adaptive filter (see page 19, lines 7-9). The newly amended independent claims were further clarified to define monitoring of the acoustic setup as a background process using the beam-forming of the first filter and the reverse beam-forming of the second filter (see page 19, lines 2-4, and page 19, lines 16-21) and periodically setting a calibration of the first (see page 16, lines 19-23) and second filter (see, and page 19, lines 17-18, and page 17, 24-25) to steer the filters toward the target signal component (see page 16, 20-23). Accordingly, the newly amended claims do not introduce new matter. In view of the clarifying amendments, the Applicant respectfully request reconsideration.

Rejections Under 35 USC § 103

Claims 7-13 and 25-39 were rejected under 35 USC § 103(a) over Oh (5,353,376) in view of Brandstein (5,581,620) and further in view of Best (4,305,131). This rejection is respectfully traversed.

The teachings of Oh are directed toward speech acquisition and enhancement. Oh uses a linear array of sensors, which are placed in the interior vehicular compartment to detect spoken input. Col. 1, lines 51-55. Oh discloses a static blocking matrix (see col. 4, lines 8-10, col. 4, lines 32-49, and Figure 2, 24) whose output goes to an adaptive filter (Figure 2, 24). Further Oh discloses a delay compensation to circuit to enhance the signal from the user.

The newly amended independent claims 7, 25, and 31 define a method of reducing noise associated received through a microphone sensor array. The target signal is enhanced by executing a beam-forming operation by a first filter. A second filter blocks the target signal by executing a reverse beam-forming operation. The output of the second filter is aligned using an adaptive filter and the output of the first filter and the adaptive filter are combined. The acoustic set-up is monitored as a background process using the beam-forming operation of the first filter and the reverse beam-forming operation of the second filter to track the target signal component. A calibration of the first and second filter is periodically set based on the monitored acoustic set-up to actively steer the first and second filter toward the target signal component during game play.

Oh fails to disclose blocking the target signal component by executing a reverse beam-forming operation. In addition, Oh fails to disclose a second filter which monitors the acoustic set-up to track the target signal component and based on the monitored acoustic set-up, a calibration of the second filter is performed to actively steer the second filter toward the target signal component. Instead, Oh discloses a blocking matrix that uses a fixed set of coefficients (see col. 4, lines 8-10, and col. 4, lines 32-49) and is silent regarding tracking and steering of the second filter toward the target signal component.

Brandstein fails to cure the deficiencies of Oh. The teachings of Brandstein disclose a method of beam-forming. In particular, Brandstein fails to disclose a second filter performing reverse beam-forming to track the target signal component and whose coefficients are adjusted depending on a changing acoustical set-up to steer the second filter toward the target signal component. The teachings of Brandstein, therefore, would not work in the context of Oh primary teachings. Indeed, if movement of the user were allowed as in Brandstein, the

required assumptions of Oh et al. would no longer apply and the formula algorithms would be void.

Best fails to cure the deficiencies of Oh. The teachings of Best disclose a gaming control with a microphone. In particular, Best fails to disclose a second filter performing reverse beam-forming to track the target signal component and whose coefficients are adjusted depending on a changing acoustical set-up to steer the second filter toward the target signal component.

The combination of Oh in view of Brandstein in further view of Best under §103 fails to disclose each element of the newly amended independent claims 7, 25, and 31. In particular, the combination of Oh in view of Brandstein in further view of Best fails to disclose a second filter performing reverse beam-forming to track the target signal component and whose coefficients are adjusted depending on a changing acoustical set-up to steer the second filter toward the target signal component.

If the Examiner has any questions concerning the present amendment, the Examiner is kindly requested to contact the undersigned at (408) 774-6910. If any fees are due in connection with filing this amendment, the Commissioner is also authorized to charge Deposit Account No. 50-0805 (Order No SONYP028).

Respectfully submitted,
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